



Vol. 9

TAMPA, FLORIDA, AUGUST, 1928

No. 8

# Research Work In Fumi- gation

By A. F. Camp, at Meeting of Florida Horticultural Society

The speakers who have preceded me have ably depicted the activities of the State Plant Board, as it protects the horticultural interests of the state from various pests and troubles. The Plant Board may be likened to the regular army which goes about its business of preparing for the great battles of the future by planning, studying and practicing upon theoretical problems which it is occupied by the more or less routine of suppressing petty troubles that arise in the routine of every day existence. They must function quietly and efficiently during the years of comparative peace and be ready to respond brilliantly and swiftly upon the occasion of a great crisis when our industry is in immediate danger. Perhaps in this connection it might be well to recall the lines of Kiplings' Tommy Atkins of the British Army and remember that the morale in emergencies is built in peace:

For it's Tommy this, an' Tommy that, an'  
"Chuck him out, the brute!"  
But it's "Saviour of 'is country,"  
"when the  
guns begin to shoot;"

In the carrying out of their routine duties and in their preparations for the battles of tomorrow the army which protects your interests has but few weapons with which to combat the enemy. They may INSPECT incoming materials and endeavor to

INTERCEPT any unwelcome travelers. This is done at the ports and in the nurseries by experienced men who are trained to recognize insect and fungous enemies. In order to simplify matters at the ports travelers are prohibited from bringing in certain fruits and the inspection consists primarily in intercepting such fruits and confiscating them. In the nursery or grove, inspection may be supplemented by sprays or washes and, in the case of canker, by fire. At the ports another weapon, is made use of to combat enemy pests that would gain entrance through shipments of fruits or vegetables and this weapon is fumigation. Thus, in two hours, a ship load of bananas may be fumigated by one man using deadly poison hydrocyanic acid whereas it would have taken several men many hours to examine each bunch of bananas separately for insect enemies. Just imagine yourself confronted with the necessity of examining the 10,000 bunches of bananas that even a very small ship may bring, knowing that every bunch may contain the potentialities of tremendous damage to the citrus industry. Fumigation thus becomes the analogue of the heavy artillery in our coastal defense; for with a single shot we may purge great quantities of material from the insect contained therein.

While the Plant Board, in a gen-

eral way, is not a research organization there are times nevertheless when they are confronted with problems whose solution bears directly and particularly upon the work in hand. One such problem is citrus canker, for success in handling this disease in a crisis is most likely to be dependent upon the information available. For this reason the Plant Board feels compelled to carry on research upon citrus canker in order to make its work more sure. A similar situation has confronted them with regard to fumigation. Here is a problem which is peculiarly a problem of the Plant Board organization for fumigation is one of their important weapons. In studying the literature on fumigation with an eye to improving their present methods it was found that the literature was far from complete and that many seeming contradictions remained to be explained. It would therefore appear that here is one of the fields in which the Plant Board is justified in carrying out investigations of a research nature.

It is with this in mind that the State Plant Board has undertaken a detailed study of the subject of fumigation in order that it may improve the efficiency of this weapon. In doing this they are looking forward to the time when the pressure exerted upon the mechanism of port inspection in particular will be far great-

er than it is today. In going into this work they have provided equipment as adequate as we know how to make it at the present time. At least a portion of it is not duplicated, as far as we know in any other laboratory in this country having been designed for our particular needs. The work is being carried on cooperatively by the State Plant Board and the Agricultural Experiment Station and out of it we expect to obtain a body of fundamental information that will be useful for all time and be a basis for the solution of new and now undreamed of problems.

Fumigation usually implies the killing of insects or other animal life through the use of poisonous gases and for this purpose many poisons have been used. Fumigation may be used to free any closed space, such as houses or rooms, of insects, in which case relatively high concentrations of gas are used. Frequently it is used to kill insects on live plant materials in which case the concentration is limited to concentrations which will not injure the plants. Unfortunately our efficient fumigating gases will injure plants if used in the concentrations that would be desirable for insect killing if no plants were present. It is inherent in the very nature of things that a gas that is very injurious to animal life will be at least to some extent damaging to plant life so that the question of plant fumigation is at best only a compromise and often results disastrously to the plants that are being fumigated, it being impossible with our present information to always know whether plants will be injured or not.

The gas having the most general application in fumigation at the present time is hydrocyanic acid. You are all more or less familiar with cyanide fumigation but it may not be amiss to call some of the characteristics of hydrocyanic acid to your attention. Hydrocyanic acid at ordinary temperatures is a colorless gas somewhat lighter than air. This gas can easily be converted into a straw colored liquid by the judicious use of pressure and cold and when in this condition it can be transported and handled with considerable ease though it boils at 79°F. when not under pressure. Hydrocyanic acid gas was formerly generated for fumigation by the use of sodium or potassium cyanide and a solution of sulphuric acid in water, using a crock or keg as a container for the reaction. For several years now the gas has been generated at a central plant

and liquified, the liquid being easily transported in cylinders and measured out for use at the job. Recently calcium cyanide dust has been developed. This dust when spread upon the floor gives off fumes of hydrocyanic acid fairly rapidly and due to the ease with which it is handled has been quite widely used. For experimental purposes, however, the liquid is most easily handled and it is also used extensively for grove and general fumigation in California and elsewhere. In addition to hydrocyanic acid itself, a number of its derivatives have been developed in the last few years but so far none of these have been outstanding successes where plants were concerned since they burned the plants in many instances even more severely than did the hydrocyanic acid gas when insect killing concentrations were used.

Carbon bisulphide has been used considerably for fumigation during the last few years, though its field of applicability is much narrower than that of hydrocyanic acid. Carbon bisulphide is a colorless liquid with a pronounced odor which is rather unpleasant. It boils at about 115°F. and for fumigation it is usually vaporized by means of heat and its use has been largely restricted to equipment especially designed for its use. When the gas is mixed with air it is highly explosive and this fact has very greatly restricted its use. It has a considerable application in the fumigation of food stuff under vacuum. It has one advantage in that it is easily smelled and except for its explosive qualities is relatively less dangerous than hydrochloric acid to human beings.

A number of other fumigants have been employed such as ether, formaldehyde, etc., but they are all of very limited applicability unless further research points out new methods of application.

Fumigation has two different phases. The first is designated as atmosphere fumigation in that the fumigant such as hydrocyanic acid is merely added to the air in a closed chamber and allowed to diffuse through the material in the room and at ordinary air pressure. The second type which is being extensively developed at present is vacuum fumigation. In this type of fumigation a chamber of heavy steel is used which can be closed up to form a vacuum tight container. The air is removed from this chamber by means of a large vacuum pump and when the vacuum has been established the gas

is allowed to enter the chamber with a small amount of air so that it permeates all the spaces of the material within the chamber. After all of the charge has been allowed to enter, the remainder of the vacuum is relieved with ordinary air or, if an explosive gas is used, with carbon dioxide, and the material allowed to stand for the usual period of fumigation. This method has the advantage of increasing the penetration in closely packed material such as dried dates, balled roots of nursery stock, etc. As a general method it holds great promise but the expense of preparing equipment for this method is very high and its superiority over atmospheric fumigation will have to be proven conclusively before we can expect to see it adopted generally.

So far we have been mainly occupied at the laboratory with the study of hydrocyanic acid and it will probably occupy us for some time to come. The problems connected with the use of this gas are varied and in order to indicate something of the breadth of the work will be briefly considered at this point. Hydrocyanic acid is very deadly to animals and is also dangerous to plant life. The primary factor governing this appears to be the concentration and our ability, to use this gas for the fumigation of plant materials comes from the fact that plants are relatively less sensitive to it than animals. Thus we can use a concentration that will not injure the plants but which will kill most insects. It frequently happens, however, that plants are severely injured by what our past experience would indicate as a safe dosage, or, conversely, that the insects are not killed by what we suppose to be adequate dosage for this purpose. These conditions are most probably explainable as due to the influence of some of the other factors which will now be considered.

**DURATION** of the period of exposure is of course closely allied to concentration but its exact relationship is not entirely clear, particularly with regard to plants.

**TEMPERATURE** is a very vital factor for it has a profound effect upon all chemical reactions and it is presumed that the burning of plants by hydrocyanic acid is largely chemical in nature.

**HUMIDITY** and **FREE MOISTURE ON THE PLANT SURFACES** are both factors that are of major importance but to just what extent is not known and the fundamental problems connected with this phase have hardly been touched upon in

research work so far. Pressure is a vital factor in determining the rate of a chemical reaction but to what extent it may influence either killing of insects or burning of plants within the range of ordinary atmospheric pressure in Florida is problematical.

Another phase of the question of pressure is involved in vacuum fumigation. The study of the relation of the physiological condition of the plants and insects to the results of fumigation represents a problem that becomes more complex as it is studied. It is commonly understood that young growth on plants is more susceptible to burning than mature growth but in carrying on experiments how can we define a condition of growth so that it can be duplicated in future experiments? No two plants are exactly alike either in composition or condition and this calls for a very careful study of the plant at all stages of growth and a great deal of statistical work in interpreting results. This variability in the plant or insect material makes it extremely difficult to study the effects of variations in concentration, temperature, etc., for we are often puzzled to know whether a result is due to the variations in the factor we are studying or variation in the organisms used. The question of the condition of an insect as influencing its resistance to fumigation is likewise important. It is well known that at certain temperatures insects may become more or less quiescent, this condition being termed hibernation under certain conditions and it is quite likely that respirational activity is greatly reduced at such times together with a reduction in the efficiency of fumigation. When an insect is within a fruit the fumigant is largely excluded and if the insect is in the pupal stage its activities are likewise at a low ebb. Very careful studies will have to be carried out to determine the relationship of fumigation to the stages in insect life history.

In carrying out of scientific experiments it is comparatively easy to analyze the effect of one factor or even of two inter-related factors where the effect of other factors can be eliminated. When, however, we must study several factors, all of which are closely inter-related, the problem is in a state where research is particularly trying. If we could say in practice that all fumigation should be carried out under like conditions of temperature, moisture, pressure and plant condition, it would be comparatively easy to establish

the effect of concentration and duration of exposure. However, the temperature, humidity, plant condition and pressure, as well as the physiological condition of the insect itself, vary with every fumigation so that the problem becomes one of great complication. This accounts for much of the uncertainty which has been coupled with the problem of fumigation. It likewise explains the reason for the complicated apparatus used in our experiments, in which so many different factors are controlled. It is not sufficient to work out one set of conditions and say that for this temperature, concentration, duration, pressure and what not, we can expect a certain result for we may never duplicate in practice this particular set of conditions. We must be able eventually to frame general rules which will enable us to predict what will happen at any temperature, concentration, pressure, etc. We cannot say to the man who has a shipload of bananas to fumigate that the temperature must be 70° F., the relative humidity 60%, the pressure 31 inches of mercury, the fruit of such and such a degree of ripeness and all insects in the mature state, rather we must furnish him with information that will enable him to know what to do in the face of the conditions that prevail on the boat at the time when the fumigation must be done.

This brings us to another phase of the problems that we have been working upon. Hydrocyanic acid gas is very highly reactive and sometimes unstable, and having a way of disappearing when certain substances are present. Most of the work done on fumigation has been based upon the dosage applied, i. e., so many ounces of sodium cyanide per hundred cubic feet, or so many cubic centimeters of liquid hydrocyanic acid, experiments being commonly reported upon such a basis. That is to say, one man fumigates a greenhouse and reports on the basis of so many ounces per 100 cubic feet and another fumigates a tight chamber and reports the same basis though we know that the actual concentrations within the two fumigated spaces would vary widely due to leakage in the greenhouse. Very little work has been done in which the gas concentration within the fumigated space has been actually determined, though this is fundamental to the solution of the problem. This lack of information leads to apparently contradictory statements in the literature as, for instance, two men studied the fumigation of tomato plants, one in a tight

room and one in a greenhouse. The man who studied fumigation in a room said that wetting the plants was a sure way to insure burning, the other advised wetting down the plants as a sure way of preventing burning and both of them were presumably honest, able men. In studying the behaviour of hydrocyanic acid in a vacuum bulb, especially designed and blown for the purpose in our laboratory, we found that hydrocyanic acid had an enormous affinity (if I may use the term) for water and acids as well as alkalis. If the inside of the bulb was wetted with water before the gas was admitted much of the gas disappeared almost instantly. The interpretation of the two papers was then apparent. In the case of the man using the room for fumigation the plants alone were wetted so that when the gas was admitted to the room it concentrated in the water on the surface of the plants. In the case of the greenhouse experiments the soil in the bench, the floor and even the walls were wetted freely, as well as the plants, before the charge was put in so that the gas had a great deal of water to dissolve in and the concentration in the water on the leaves was correspondingly low. In the first case burning resulted from the concentrated solution on the plants, because there was only a small amount of hydrocyanic acid in the water on the plant, in the second case no burning resulted. The great reactivity of hydrocyanic acid results in a decrease in the efficiency of diffusion particularly thru small spaces. Suppose you have a barrel full of potatoes and you put a charge of hydrocyanic acid in the air above them, if the potatoes are damp the hydrocyanic acid will be absorbed by the surfaces of the top potatoes and only a very little of the gas will reach the bottom of the barrel. Thus we must study the relation of surface to absorption and diffusion for here are two important variables. Place one small plant in a chamber and fumigate it, analyzing the gas in the chamber several times during the duration of the fumigation and you will find that the concentration is quite high throughout the period of fumigation. But fill the same chamber with closely packed material and the concentration in the air falls off with great rapidity—particularly if the material is damp—but how fast and under what conditions? That is for us to determine.

Turning now to the equipment itself we have in figure 1, a front view of the battery of four chambers for

atmospheric fumigation. This battery of chambers was made with the greatest care, of high grade flooring, with all joints leaded and with two layers of asphalt building paper between the double walls—a standard construction for such boxes. It was found on analyzing samples of gas that in spite of the careful construction there was a great amount of leakage together with absorption of the gas by the paint used on the inner surfaces. The chambers finally had to be coated internally with a thick layer of hard paraffin to stop this loss. The doors are of the same construction as the boxes and rubber tubing is used to prevent leakage around them. Each chamber has an automatically controlled heating coil and the bulb of a recording thermometer is sealed into the top. An 8" fan is used to agitate the air during the course of experiments so as to keep the temperature and gas concentration constant. These boxes are about as near gas tight as it is possible to build them. On the back of each box is the complicated unit shown in figure 2. On the left is an air pump that draws air out of the box, passes it through sulphuric acid or other solution in the large bottle for removing or adding water vapor, from which it passes through a collecting trap which is back of the bottle and which catches any acid spray that gets out of the large bottle. The gas then enters a manifold that returns it to the fumigation chamber; in this manifold are two thermometers, one with a wet and one with a dry bulb, and with these the humidity is determined. In the same manifold is a burette which is used to measure out the proper amount of liquid hydrocyanic acid. On the right is a sampling apparatus which is used to draw accurately measured samples of the air and gas mixture out of the inside of the chamber, the hydrocyanic acid being trapped in concentrated caustic alkali in the small flask as the air is pulled through it. In figure 3 is shown the general view on the back of the battery of boxes. So far it has been impossible to find a satisfactory substance for controlling the humidity that will not absorb hydrocyanic acid so that the humidity desired has to be established before the experiment is started and allowed to take care of itself during the course of the experiment. We hope, however, to remedy this with more experimental work.

In figure 4 is shown the vacuum fumigator. The chamber in which the material is placed is a large steel

## THE CITRUS INDUSTRY

tank with a heavy door which has a rubber gasket under it and which can be made air tight. The line of pipe running over head to the left goes to the large vacuum pump and the complicated apparatus in the foreground is used for charging the tank with hydrocyanic acid or carbon bisulphide. Back of the large tank is seen the recording thermometer which records the temperature within the fumigation chamber. In figure 5 is a front view of the same equipment showing the details of the door and charging equipment. The hydrocyanic acid is kept in the cylinder to the extreme left, note the pump used for forcing the liquid out of the cylinder. The cylinder is connected to the measuring tube where the sample is measured out and then drawn into the evacuated tank through a vaporizing nozzle. A generator for hydrocyanic acid gas is also provided in case none of the liquid is available and can be seen just to the right of the cylinder containing the liquid. The cylinder next to the post is a vaporizer for carbon bisulphide, the remainder of the carbon bisulphide apparatus being disconnected. In figure 6 is the large vacuum pump which is used to withdraw the air from the chamber. Such apparatus is being used extensively for fumigation in California and also for fumigating baled cotton in Texas. The tanks are made large enough to admit a freight car and may come into general use when they have been studied more thoroughly.

In figure 7 is shown the sampling apparatus as used on shipboard. The sampling bulbs are the same as those seen in figure 2 on the back of the fumigation compartments in the laboratory. Samples of the air are drawn out and analyzed during the actual period of fumigation. Tubes are installed in the boat so that the samples may be withdrawn from various points to determine the uniformity of distribution and the actual concentration throughout the period of fumigation. Thus we do not have merely information on what WAS ADDED but information as to WHAT WAS THERE.

In conclusion I want to impress this upon you—that this work is not primarily for the solution of immediate question or to strengthen out the little troubles that come up from time to time. Too often that kind of research is only a little salve on a festering canker which should really be removed root and branch. If we adhere to that kind of research in the end we face the difficult problems

August, 1928

with only tag ends of knowledge instead of a broad, comprehensive understanding of the principles involved. This work is primarily to study those basic principles and to lay the foundation for the solving of difficulties that we are certain to face in the future. By the aid of this mass of basic knowledge we will be able to meet the new and unforeseen difficulties as they arise and meet them intelligently—we are not studying GROVE FUMIGATION OR SHIP FUMIGATION; we are studying FUMIGATION and the information will be applicable to all types and varieties of fumigation.

## A Correction

In the June issue of The Citrus Industry we printed a paper given by Prof. E. L. Lord of the State College of Agriculture at the recent meeting of the State Horticultural Society. In this article Prof. Lord made reference to a variety of citrus to which he referred as Connor's seedless. Prof. Lord now requests us to correct his paper to make it read Enterprise instead of Connor's seedless.

The sentence in which reference was made to Connor's seedless as now corrected by Prof. Lord should read:

"Another type of tree, the Valencia and Enterprise (low carbohydrate trees with upright sucker type of growth) will require an entirely different treatment to cause fruit bud differentiation."

Prof. Lord states that he is asking Secretary Floyd of the Horticultural Society to make a similar correction in his paper as it is printed in the minutes of the Horticultural Society.

## WILL CARRY FLORIDA FRUITS TO ENGLAND

Two refrigerator ships of the Palmetto line, operated by the United States shipping board, will carry Florida fruit from Jacksonville to England on regular schedule, when the fall citrus season opens up, it was announced in a telegram from Senator Duncan U. Fletcher, to the Jacksonville chamber of commerce.

The new service will be instituted in November, and Florida fruits will be on many United Kingdom tables by Christmas, it was declared.

An organized effort is being made by the farmers around Bascom Point, Palm Beach County, to exterminate rats,

# Florida Freight Rates

Data Compiled by Traffic Department, Chase & Company, Orlando

"Largely upon the railroads themselves will depend the public treatment of them. The questions that confront them are largely those of 'attitude' and 'relation'. If they always approach the subject they are required to face from the standpoint of public interest in transportation it will be found that they will serve the interest of their owners."

This statement by the late S. Davies Warfield, president of the Seaboard Air Line Railway, is probably the most pregnant utterance ever made on the subject of railroad-ing. In a few short words Mr. Warfield summed up the policy which our rail lines must follow if the carriers and the public alike are to prosper. Past history sufficiently proves that this rule is the only one which can long exist if there is to be success for those engaged in transportation and those relying upon transportation.

In the earliest history of our steam transportation the rail lines were carefully nurtured by the public and were given many considerations and large grants of land to encourage growth. Rapidly responding to this treatment steam lines soon grew to be a most vital factor in the national progress. With this growth, however, there developed evils which impoverished many lines and began to force small shippers out of business. The greatest evil, rebating in order to obtain business, became so serious that weaker lines and small shippers had very little chance to thrive against their larger and favored competitors. Public opinion, ever guardian of equity and justice between carriers and shippers, caused action to be taken by Congress which stopped this practice and once again restored proper relations between the carriers and the public.

Restored by legislation to a place where they could prosper, the general attitude of the carriers became very independent. "The public be damned!" was rumored to have been said by one large railroad official. Whether this sentiment was actually voiced or not, it was the general attitude which prevailed for a period of years prior to the world war. Naturally this attitude bred public distrust, and many severe laws were passed which otherwise would not have been placed upon the carriers.

It became more and more difficult for the railroads to obtain the assistance and co-operation necessary from the public.

When the war broke out the railroads were taken under government control and continued under government control until 1920, when they were returned to private ownership. Never in the history of transportation were the railroads in such chaotic condition as they were immediately following termination of government control. Equipment and road beds were run down. Inefficiency of government operation had left once prosperous lines practically destitute. Efficient methods could do much toward rehabilitation, and eventually, by careful operation, the carriers could be restored to a state of efficiency, but the seriousness of the situation demanded quicker relief. Railroad leaders recognized that they must have the public's support during this distressing period and, with that in view, they created special organizations to develop relations with the public. One thing was certain—the carriers must have an immediate increase in freight rates. In order to obtain speedy relief they needed the public's help, and when they approached the situation by appealing to the public in a friendly way, they received magnanimous response and were aided in obtaining higher freight rates thru the Interstate Commerce Commission.

Today it is safe to say that all transportation lines are in better condition than they have ever been before, both physically and financially. What of the public good? Have the carriers again fallen in the errors they made in the past during prosperous times? In some sections this question would be answered "Yes", and in others, "No." Since we are only directly interested in the situation as it applies to Florida, let us consider the history of the Florida situation as it applies to Florida perishables, which are really the solid foundation of Florida's prosperity.

When the rates on fruits and vegetables from Florida were established by the Interstate Commerce Commission in 1908, the industry was comparatively in its infancy, and rates were established which would remunerate the carriers for

gathering services and special high costs occasioned by the lack of volume. At this time, however, the rates established, while high, were not so high that the perishable industry could not grow, since severe competition with other fruits and vegetables, as we know it today, was not in evidence. The volume from Florida was such that it could be distributed along the Atlantic seaboard.

Several years prior to the World War competition began to grow very great, and Florida shippers felt the necessity for a more elastic freight rate structure. The volume had increased to such a great extent that it was necessary to reach into more distant markets. California lines had long ago established a blanket rate system for the benefit of California citrus growers, and as the production in each state continued to mount, the importance of freight rates grew more intense. The growing of perishables in the whole United States had increased at an unbelievable rate. Such products as cantaloupes, bananas, and apples began to compete highly with citrus fruits and competitive vegetables were making the situation difficult for the Florida vegetable growers.

The Florida shippers made an appeal for relief to lines handling their productions and pointed out the difficulties they were encountering, but this appeal was refused. This should be contrasted with the action of the California lines, who had voluntarily reduced their freight rates so that their growers might be on an equal basis with competitors and also with Mississippi valley lines, who had established low rates so their growers might have an advantage over competitive growers. Both of those sections are great competitors of Florida.

The Florida shippers were preparing to go before the Interstate Commerce Commission for an adjustment of rates, but the war came on, prices soared, and the matter was not agitated further. Here is a sound example of how the Florida shipper considers the question of freight rates. In times of railroad distress and in times when the shippers can market their products profitably there have been no complaints against the freight rates. We think there is no fairer example of this than the act-

ion of the Florida shippers immediately after the war in actually disapproving of a move to bring about a reduction of freight rates. At the very time the shippers were disapproving efforts to lower freight rates they were confronted with a serious marketing situation, but the railroads were in very bad condition after government operation and the Florida shippers refrained from taxing action that would reduce the revenues until such time as the railroads could be returned to good condition.

By 1923 the carriers had recovered greatly and the Florida shippers felt it was time to again bring up the question of the proper revision of rates. Consequently representatives of the various Florida lines were called together in conference, the situation was explained fully, and relief was requested. Again the Florida lines refused to do anything to help the shippers.

It is probably wondered why so much is written about the lack of recognition the Florida lines have given the Florida perishable shippers. It is hard to believe that such a large industry and one so greatly profitable to the carriers would be treated with indifference and lack of sympathy when it might well be claimed that the prosperity of those lines is dependent upon this industry (Florida produces nearly one-tenth of all the perishables shipped in the United States.) Yet by looking at the cold figures, and by comparing the situation with competitive situations it cannot be denied that the complaints of the Florida shippers against the lines upon which they must depend are well founded.

The Florida industry is still struggling against competitive handicaps, and while the Florida carriers have prospered greatly, they have not only made no attempt to assist their growers in meeting competitive situations, but have made every possible attempt to impose additional restrictive rules and burdensome charges, thereby increasing the difficulties of marketing.

In the distribution of his products, the Florida grower is hampered by increased freight rates as his shipments move north, while the California shipper may move his cars from market to market without an increase in cost. If the Florida shipper, for example, moves a car of citrus to Louisville and upon its arrival it is found that the market at that point has declined 20 cents per box, but that by reshipping to Milwaukee he can obtain what he orig-

## THE CITRUS INDUSTRY

inally expected to in Louisville, he must take into consideration the difference in rate, and he would find that it would cost him approximately 20 cents per box additional to move his car to Milwaukee, so that he would have nothing to gain by doing so. On the other hand, if a California shipper were placed in a similar situation at St. Louis and desired to take advantage of a difference in the market at New York, he might move his car to New York without additional cost and take the benefit of the higher market.

The vegetable situation is even more acutely serious. Florida comes into condition on certain of its products with Mississippi and Texas, principally, and at certain times of the season with other Southern shipping points.

Competition from Mexico and Mississippi becomes greater each year and competition from these sections almost forces the Florida shippers out of the game. A few rate comparisons will serve to illustrate with what the Florida grower has to contend.

Sanford, Florida, is approximately 347 miles nearer to New York City than Crystal Springs, Miss., yet the rate on tomatoes from Crystal Springs to New York is 17 cents per hundredweight less than from Sanford. Homestead, Florida, is nearly 100 miles nearer New York City than Crystal Springs, yet the rate from Crystal Springs is 59 cents per hundredweight less than the rate from Homestead.

Florida east coast growers have suffered particularly from competition with Mexican grown tomatoes. Tomatoes can be grown cheaper in Mexico and the Florida grower is at a disadvantage at the outset without taking into consideration freight rates. Yet, to Detroit, Michigan, with the distance from Homestead approximately 300 miles less than from San Blas, Mexico, the Florida shipping point pays 23 cents per hundred-pounds greater freight rate. To further illustrate the inconsistency of this situation, this Mexican shipping point actually has a slightly lower rate to Pittsburgh than the rate from Homestead, yet Homestead is approximately 500 miles nearer to Pittsburgh. The situation is so serious that many tomato growers have been forced to water transportation this season, altho this transportation is necessarily limited in its possibilities and is generally less desirable than rail transportation. It is either a case of finding some cheaper meth-

od of distribution or of going out of the business.

It takes no great amount of thought to see from these figures what a difficult situation the Florida growers face. Several years ago an intrepid grower planted a large acreage in tomatoes in the northern part of the state, which would come into competition with Mississippi tomatoes. Of an estimated production of 100 cars, only 3 or 4 were ever shipped, and the grower pocketed a loss of around \$20,000.00. It simply was not possible to off-set the advantage in freight rates.

Contrary to popular opinion, the original receiver does not figure on a large margin of profit. If he can average 50 cents per package to cover the cost of distribution to his trade, he is satisfied. Obviously, this does not average a large amount of profit, as it contemplates truckage, interest on money involved while the produce is being held for sale, losses from spoilage, reconditioning cost, selling, and general office expenditures. Consequently, the jobber figures on a very close basis. If he can obtain a shipment of tomatoes from Mexico with even a 5 cents per package advantage, he will naturally buy the Mexican tomatoes in preference to the Florida tomatoes. It is very well to say the Florida grower could equalize his prices to meet this small difference, but it must be borne in mind that every time the Florida producer cuts his price nearer to the cost of production in order to meet competition, his competitor can likewise proportionately reduce his price to the extent of the advantage he has in the difference in the freight rate.

Florida is also at a disadvantage in routing and diverting shipments. While the California shipper enjoys practically unlimited privileges and may move his shipments forward in practically any manner, the Florida shipper is more or less confined to certain routings, and if he desires to take advantage of a market situation which would entail movement contrary to the restrictions made by the carriers, he is penalized by having to pay local rates. Comparatively recently the Atlantic Coast Line Railroad placed a great handicap upon the industry by specifically naming routes which the Florida shippers must use to various markets, allowing extremely elasticity for unexpected or competitive marketing conditions. Since this is the largest line originating Florida perishables, these restrictions strike vitally at the

Continued on page 24

August, 1928

*Citrus fruit root stock*  
THE CITRUS INDUSTRY

JACKSONVILLE  
PUBLIC LIBRARY

# Fruit and Rose Stocks Decision

The Secretary of Agriculture announces that on and after July 1, 1930, by amendment to Quarantine 37, apple, pear, quince, and Mazzard cherry stocks will be excluded from entry into the United States. Similar action, which was considered as to Mahaleb cherry, Myrobalan plum, and rose stocks, is deferred for further study and determination of the question of availability of satisfactory home-grown stocks of these classes.

This decision is based on the evidence presented at the fruit and rose stocks conference, held by the Federal Horticultural Board June 27, 1928. This conference was attended by official and other representatives of the American Association of Nurserymen, the Society of American Florists and Ornamental Horticulturists, the horticultural specialists of the Bureau of Plant Industry of the Department of Agriculture, and others in interest. The evidence presented as to apple, pear, quince, and Mazzard cherry stocks indicated that the present availability of satisfactory American-grown stocks of these fruits was sufficient to justify the exclusion of these stocks after a reasonable period for adjustment of business contracts, etc., and thus terminate the very considerable and continuing risk of entry with such stocks of new and dangerous fruit pests.

The evidence presented as to availability of satisfactory American-Myrobalan plum was not deemed grown stocks of Mahaleb cherry and sufficient by the specialists of the department to warrant fixing a date at this time for the exclusion of these stocks.

A somewhat similar situation developed in connection with the rose stocks. The evidence was somewhat conflicting, showing on the one hand that for a series of years American-grown rose stocks had been satisfactory and that their use in competition with foreign stocks by growers was rapidly increasing, but, on the other hand, in 1927, difficulties developed with such stock which seemed clearly to warrant the postponement of action for such period as would be necessary to clear up and eliminate these difficulties.

It will be recalled that the conference of June 27, 1928, was in continuation of a conference on this general subject, held June 29, 1925. and that this earlier conference was called at the suggestion of nurserymen and rose growers to consider the fixing of a possible date for the termination of further entry of foreign stocks. At that conference the American Association of Nurserymen reported a resolution, which had been adopted by that Association at its convention held in Rochester the preceding week, that it was the sentiment of the American Association of Nurserymen that no earlier date than July 1, 1930, should be tentatively set for the exclusion of foreign fruit and rose stocks. It was also recommended that, before final action should be taken by the Department of Agriculture, a further conference to consider the availability of such stocks should be called following the meeting of the American association of Nurserymen in June, 1928, for the purpose of determining at that time the progress made in the production of American-grown stocks as to quality and quantity.

With respect to the deferred action as to the items, Mahaleb cherry, Myrobalan plum, and rose stocks, if in the judgment of the department it should later seem possible to consider final action relative to these stocks a conference will be called, and if the information presented should warrant the department in excluding such stocks it is understood that the effective date of such exclusion will, if safety permits, be so fixed as to allow a reasonable period for adjustment, both in this country and abroad.

## **Pest Risk from Imported Fruit and Rose Stocks**

Following the passage of the Plant Quarantine Act in 1912, the entry of nursery stock in general, including fruit and rose stocks, was permitted under certification by competent experts in the country of origin, with such reinspection at point of destination in the United States as could be made by the State inspection officials. A practical test over a seven-year period of the possibility of safeguarding plant imports by such inspection, indicated clearly the inade-

quacy of this method and the conclusion was forced that the only possible means of effectively lessening the introduction of new plant pests would be in greatly restricting plant imports. This policy was carried out in the promulgation in 1919 of Quarantine 37, which restricts the entry of most nursery stock and other ornamentals to certain purposes which are believed to be necessary to the development of American horticulture. Among the classes of plants which were permitted unlimited importation under this quarantine, were fruit stocks and rose stocks on the plea that these represented a horticultural necessity warranting the acceptance for the time being, and with the enforcement of all possible safeguards of the risk involved in the temporary continuance of such mass importations. It was the distinct understanding that, when this necessity could be met from home sources, further entry of such stocks would be discontinued, and the nursery and other associations in interest in attendance at the hearing of 1919 joined with the Department of Agriculture in securing a Federal appropriation to canvass the field of production in the United States and to aid and encourage the development of the production of such home-grown stocks.

In spite of inspection in country of origin and such reinspections of imports at destination as it has been possible to make here through the cooperation of State inspectors, the numbers of new and dangerous pests which are coming in with these stocks have been a full demonstration of the undesirability of continuing such importations beyond the period of real horticultural necessity. A further consideration is the fact that while the main safeguard must necessarily be the State inspection at destination, it has not been possible to develop any uniformity in such inspection on the part of the different States, and in the case of some States the inspection has been very perfunctory.

Farmers of Columbia County are using 100 tons of land plaster on their peanut crop this year, reports County Agent C. A. Fulford.

# The Citrus Industry

with which is merged The Citrus Leaf

Exclusive publication of the Citrus Growers and Shippers

Address all communications to the Main Office  
415 Stovall-Nelson Building  
Tampa, Florida

Telephone \_\_\_\_\_ 4819

S. L. FRISBIE, Editor and Manager

FRANK KAY ANDERSON \_\_\_\_\_ Assistant Manager  
A. G. MANN \_\_\_\_\_ Production Manager

Published Monthly by  
Associated Publications Corporation  
Tampa, Florida

Subscription, \$1.00 per year in advance

Entered as second-class matter February 16, 1920, at the post-office at Tampa, Florida under the act of March 3, 1879.

Branch office and production plant, Bartow, Florida.

NEW YORK OFFICE  
350 West 55th Street  
Phone Columbus 8244  
FRED SHERWOOD CLARK, Manager

CHICAGO OFFICE  
28 EAST JACKSON BOULEVARD  
Telephone Harrison 1233  
William Robert Shannon, Manager

## GROVE CALENDAR FOR AUGUST

### Timely Suggestions for Grove Work During the Present Month

Cultivate young trees, keeping the rows free of grass and weeds.

Watch for rust mites and spray with lime sulphur or dust with sulphur dust to control.

If whitefly or scale are abundant, spray with oil emulsion. Whitefly fungi may now be secured from the State Plant Board, Gainesville.

Prune out dead wood and remove water sprouts.

## GROWERS AND SHIPPERS UNITE

*Clearing House*  
On August 3rd at Winter Haven, the grower members of the Florida Citrus Growers Clearing House Association, by practically unanimous vote approved the changes in the charter and by-laws which insured the affiliation of the independent shippers. Only nine votes were cast against the acceptance of the changes proposed by the shippers.

From the inception of the idea of a growers' clearing house, it had been evident that there

existed a divergence of opinion between growers and shippers as to the part the shippers were to play in the proposed organization. Frequent conferences were held and numerous proposals and counter proposals were made.

Finally, at a meeting held in Tampa, at which J. A. Griffin, president of the Exchange National Bank acted as mediator, an agreement was reached between the directors of the Clearing House Association and the Shippers. This agreement was submitted to Secretary Jardine at Washington and received his approval. It was this agreement which was accepted by the practically unanimous vote of the grower members.

The principal changes in the by-laws provide for the actual operation of the Clearing House by an operating committee of shippers, who shall be responsible to and subject to recall by the board of directors, the enlargement of the board by the election of four directors at large, and the provision that grower-shippers are eligible to membership on the board of directors.

As a result of the acceptance of the amendments to the by-laws, most of the independent shippers who had declined to join the Clearing House movement, have now signed up, and it is estimated that between eighty-five and ninety per cent of the Florida citrus crop will be under Clearing House control.

Already steps have been taken to put the Clearing House into operation and at a meeting to be held on August 10, at Winter Haven, it is expected that final details for the setup of the organization will be completed.

The formation of the Florida Citrus Clearing House Association is the culmination of nearly two years of activity on the part of citrus factors. First proposed and sponsored by the shipping interests, the original proposal was given its death blow when the Florida Citrus Exchange declined to join the independent shippers in the plan proposed.

A solution of the citrus problems was next sought by a committee from the State Chamber of Commerce, by an association of newspaper publishers and others. Finally, action was taken by the growers themselves at a meeting in Winter Haven last winter. This developed into a "committee of fifty" and this committee in turn evolved the Clearing House idea as originally proposed, and which now has been molded into form apparently acceptable to both growers and shippers.

Under the plan as finally accepted and approved, the grower will be in actual control of the organization, but will be aided by grower-shippers on the directorate and have the benefit of the experience of the shippers in the operating committee.

The set-up may not be perfect in its present form, but it represents the best thought of the best minds in the industry and promises vastly more in achievement than any plan previously proposed. Properly worked out under efficient management, the Florida Citrus Clearing House Association should mean much to both growers and shippers.

## WHAT THE CLEARING HOUSE CAN AND CANNOT DO

With the Citrus Growers Clearing House definitely established and preparing to function, growers and shippers of Florida citrus fruit are looking forward with confidence to greatly increased efficiency in the marketing of the fruit. This confidence, The Citrus Industry believes, is justified.

There are many things which the Clearing House can do to benefit the industry. There are many features of the marketing end which the Clearing House can control to the benefit of both the grower and shipper and to the immense advantage of the state as a whole. With control of eighty-five to ninety per cent of the crop vested in the Clearing House, many features of marketing which have heretofore operated to the disadvantage of the growers and shippers will be eliminated.

The Clearing House can, and doubtless will, control distribution, equalizing the movement of the crop so that all markets may be amply supplied with fruit at all times, while avoiding a glut of any market at any time.

The Clearing House can operate to standardize grade and pack, and thus insure a more favorable reception of Florida fruits in the markets of the land.

The Clearing House can and will take up the problem of commodity advertising of Florida citrus fruits, and through such advertising tend to develop new markets and expand the consumption of Florida fruit.

These things the Clearing House may reasonably be expected to do, and each will have its influence in bringing about a betterment of conditions in the industry.

There are some things, however, which the Clearing House cannot do, and which it should not be expected to do, at least not at the outset when the machinery is new, nor until the organization has had time to adjust the markets to new conditions.

The Clearing House cannot control the supply. It cannot, until it has had time to develop new markets and to increase the demand through a campaign of judicious and effective advertising, hope to regulate the demand. So far as the present season is concerned, the Clearing House cannot be expected to exert any influence upon the law of supply and demand. It cannot hope to secure record prices for fruit at such times as buyers are confronted with a record crop.

Nor can the Clearing House hope to secure top prices for inferior fruit or fruit of poor appearance. These are matters for the attention of the individual grower, and the grower who produces fruit of poor quality or poor appearance has no reason to look to the Clearing House to bring him prices equal the prices ruling for fruit of good quality and appearance.

The Citrus Industry believes that the Clearing House promises more to the grower and the shipper than any step which has been taken or proposed for the betterment of the industry. It recognizes, however, the danger that some

growers may expect too much and too soon. Given time and that measure of loyalty and support on the part of growers to which it is entitled, we look for the Clearing House to fully justify itself and the expectations of its sponsors. But this is going to take time and call for patience and loyalty on the part of members. There is going to be no sudden revolution in the industry. Rather, it is going to be a matter of evolution and gradual growth.

If growers and shippers realize this at the outset and will work together and stick together until time has had the opportunity to demonstrate the soundness of the foundation upon which the superstructure of the Clearing House is built, we fully believe that the Clearing House will prove itself the greatest instrument for good for the industry and the state which has ever been evolved.

## LINE HAUL RATE CASE

The recent decision by the Interstate Commerce Commission in the Line Haul Rate case is proving to be a puzzle which none of the traffic experts have so far been able to solve.

When the announcement was first made, the general public rather quickly jumped at the conclusion that Florida shippers had won a notable victory. Then the traffic experts began studying the case, with the result that no two have been able to agree—and few have been willing to venture a guess as to just what the decision means.

One traffic expert who consented to write an opinion for The Citrus Industry, later wired us to "kill that article. Too many jokers in that decision."

This appears to be the general disposition among the rate men and traffic experts, and until the legal departments have had time to sift the decision to the bottom, no official interpretation is to be expected.

In general, it is thought that some minor advantages have been secured for Florida shippers, but to what extent these may be effective in savings on the shipments as a whole is problematical. Generally speaking, the rate men are agreed that while some concessions have been made, there are increases in certain territories which may operate to largely nullify these advantages.

Meantime, all shippers are diligently studying the new schedules and rather impatiently awaiting the final report of the experts and the legal lights of the industry.

In buying nursery stock, it is doubly true that "the best is the cheapest." Also, that "poor stock is dear at any price." A profit earning grove must be based upon a foundation of proper root stock properly budded to fruit of known excellence.

Profits are more frequently gauged by the quality than by the quantity of your products—whether they be products of your soil, your hands or your brains.

*Newton, Victor B.*

## VICTOR B. NEWTON

In the recent death of Victor B. Newton in a hospital at Orlando, following an operation for appendicitis, the citrus industry of Florida loses one of its most prominent and popular personalities.

Young in years, Mr. Newton had achieved a position of prominence in the industry which was equaled by few men in the state. As active head of the Standard Growers Exchange in the state, Mr. Newton occupied a position of responsibility and trust attained by few men of his age.

As a leader among the shipping interests of the state and as a harmonizer of differences, Mr. Newton held the confidence and esteem of all elements and all factions. His counsel was sought on all questions of moment, and his advice was seldom disregarded.

As head of the Fruitmen's Club and as a leading figure in the Growers' and Shippers' League, Mr. Newton did as much perhaps as any man in the state to further the interests of the citrus industry of Florida.

In his early death, the industry loses one of its most capable leaders and one of its strongest personalities.

### WHO WILL SUCCEED?

"Growers who have good orchards should hold on to them, provided they know their business, are favorably situated with regard to handling and marketing and are willing to adopt every reasonable method to hold down production costs and still have high yields and good quality. Such growers will undoubtedly weather the storm. But for the city speculator, the unskilled, the incompetent and the unfit no hope is offered. The sooner they realize their true position and make a change in their farming programs the less they will stand to lose."

The foregoing is an interesting comment on the general fruit situation in California as made by the staff of the college of agriculture of the university of California in a recent circular on "The Agricultural Situation in California."

While no specific reference was made to the citrus industry, those who have had experience in it, know that the comments apply with equal force to the grower of grapefruit, lemons or oranges, as to the man who has an orchard of figs, prune, peaches, olives or pears.

There are some citrus orchards which are so poorly situated that the owner may never expect to carry on a profitable enterprise except possibly in a year of peak prices. The man who early finds out that neither he nor his land are adapted to the growing of citrus and decides to apply both himself and the land to other purposes, will find himself better off than he who tries to run a "border line" grove with a "border line" type of efficiency.—California Citigraph.

Present indications are that the coming crop will run to larger sizes than during the past two years. Now, if along with these better sizes we can have fruit of bright appearance, there will be no trouble finding markets to absorb the crop at a profit to the grower.

Always Dependable

A TRUCK LOAD or a TRAIN LOAD

IDEAL Fertilizers

WILSON & TOOMER FERTILIZER CO. IDEAL FERTILIZER IDEAL

Manufactured Exclusively by  
**WILSON & TOOMER FERTILIZER COMPANY**  
 JACKSONVILLE, FLORIDA



## SUNSET Citrus Wraps

Are Strong, Pliable and Well Formed.

They Twist Down Close.

Good Looking, Well Printed and a standard for comparison.

**FRED C. STRYPE**

140 Lafayette Street  
 New York City

# BLUE GOOSE NEWS

Monthly News of American Fruit Growers Inc.



Edited by The Growers Service Department

VOLUME 2—No. 9

ORLANDO, FLORIDA, AUGUST 1, 1928

PAGE 1

## FIRST CLEARING HOUSE HAS UNUSUAL HISTORY

A recent article upon the subject of Clearing House movements in the fruit and vegetable industry issued by the U. S. Department of Agriculture credits the joint effort of cantaloupe shippers of the Imperial Valley a number of years ago as being the first of its kind in the United States. This is credited as being successful for a number of reasons, principally "because the shippers cooperated fully in making the distribution successful."

The joint effort in the Imperial Valley cantaloupe deal has continued without interruption over a period of years, though in the last two years great increase in f. o. b. selling is said to have reduced its usefulness somewhat. The Imperial Valley plan of cantaloupe distribution continued in effect, according to this article, for a number of years before the next Clearing House movement took form among the prune growers of the Northwest. Others have since followed fast, with varying degrees of successful performance.

That the Imperial Valley plan of cantaloupe distribution was the "daddy" of the Clearing House idea is of interest to the readers of these columns because of the prominent part played in its formation and later operation by Mr. J. S. Crutchfield and Mr. R. B. Woolfolk, now respectively president and chairman of the board of the American Fruit Growers Inc.

At that time the cantaloupe industry of the Imperial Valley was in desperate straits. Prices being realized were less than production costs. Many growers were looking bankruptcy in the face. Study of the situation convinced leading shippers that it was not competition from other producing areas but faulty distribution of the Imperial Valley cantaloupe crop which was responsible.

## FLORIDIAN MEETS OLD FRIEND IN BARCELONA

Joseph Mickler long well known as a member of the staff of the Tampa Daily Times is now traveling abroad. Under the heading of "Horizons" he contributes his first hand impressions of foreign countries to The Times in a most interesting and entertaining manner.

How far flung is the banner of the American Fruit Growers Inc. is well illustrated in one of Mr. Mickler's recent contributions, giving his impressions and experiences in Barcelona, Spain, upon the eve of his departure from that place for Marseilles. This appeared in the Tampa Daily Times of July 20.

After descriptions of Barcelona and its people and a recital of his contacts and personal experiences Mr. Mickler tells thus of his unexpected meeting with an old Florida friend in this great city of Spain, the cradle of the world's citrus industry:

"American movies. American safety razors. American soaps. All sorts of American products. But on a quiet Barcelona street, in a well lighted window there, there was reserved for me the finest sight of all—half a dozen Florida grapefruit. How do I know they were Florida grapefruit? Listen. On each grapefruit there was stenciled, in blue lettering, the familiar words: 'Blue Goose'."

Their discussions revealed a willingness to get together, but the rigid enforcement of the Sherman Anti-Trust Law then prominently to the fore in U. S. politics offered a stumbling block of large proportions. The aid of the U. S. Department of Agriculture was sought. Finally a specially named representative of the department was sent to the Imperial Valley to work with the shippers, and to daily collect and collate data covering shipments and distribute it quickly to all the shippers. This mark-

## ODESSA NOW JOINS BLUE GOOSE RANKS

Odessa Lake Region Growers Inc. is the name of the newest packing organization to market its fruit through the American Fruit Growers Inc., Orlando Division.

The new organization has been formed at Odessa in the beautiful lake region of the southern part of Pasco County, where oranges, grapefruit and tangerines of most excellent quality are produced. The new organization will handle the fruit of a number of prominent growers of that locality.

Officers of Odessa Lake Region Growers Inc. are J. H. Dowling, President; Clay Binion, vice-president; and G. D. Wing, secretary and treasurer. The directors as given in the incorporation papers are J. H. Dowling, Clay Binion, C. D. Wing and W. H. Dowling. Additional directors are later to be added from among the growers affiliating with the organization it is understood.

A modern packing house building eighty by one hundred sixty feet has been constructed, and packing house machinery is being installed. The plant will be completed so as to be in operation at the beginning of next shipping season.

ed the real beginning of the Market News Service now so valuable a feature of the Department of Agriculture's activities. Working closely with this representative of the Department of Agriculture a committee of shippers took hold of the situation, and with practically all shippers cooperating closely, order was quickly brought out of chaos. The Imperial Valley cantaloupe deal was turned from failure to success, to the profit of all concerned particularly to the growers.

From outside the district some opposition was encountered at the time; but the Imperial Valley cantaloupe

Continued on page 2

## BLUE GOOSE NEWS

OFFICIAL publication of the American Fruit Growers Inc., Growers Service Department, published the first of each month in the interest of the citrus growers of the state of Florida.

EDITORIAL ROOMS  
502 Yowell-Drew Building  
ORLANDO, FLORIDA



### CLEARING HOUSE

The Florida Citrus Growers Clearing House is now launched under most favorable auspices. The very high percentage of the total citrus tonnage which it will control in its first season of operation should be of great advantage.

The time which has been consumed in getting the undertaking upon an operable and practical basis in the long run should be time gained because of the united good will it enjoys and the care with which provision has been attempted for future developments and contingencies.

The undertaking marks an important phase in the development of citrus production in Florida because for the first time the great bulk of all interests are through it arrayed together for the common advancement of the industry in all its phases.

The American Fruit Growers Inc. takes pride in being enrolled as a partner in the project, and is pleased with the company of the others with which it finds itself committed to the effort.

This organization is not a stranger to such undertakings. It is a member of other undertakings of similar intent and purpose in other producing sections, and prides itself upon the manner in which it has acquitted itself in its participation in these. Because of this practical experience in the working of such undertakings the American Fruit Growers Inc. is not disposed to expect revolutionary nor too immediate results from this joint

effort in Florida. Even the most successful similar undertakings have little in common with magic wands. Yet because of this same experience we are entirely confident that the benefits which will accrue to the Florida industry from the Clearing House will be well worth the effort and the expense involved.

An important forward step is being taken.

### VICTOR NEWTON

It is given to but few men to win the friendship and respect of practically all with whom they come in contact, particularly of those who are numbered as business competitors. Victor B. Newton was such a man.

His services, valuable as they were to his employers and business associates, were of tremendous value to the Florida industry as a whole. For Victor Newton was a fair minded individual with constant regard for the rights and privileges of others, and possessed of an all embracing friendliness which made him a powerful factor in behalf of harmony and united effort within the industry.

His charity and friendliness disarmed even those who strove to create dissension in order to serve their own ends and ambitions. His known fairness of attitude kept him in constant contact with every phase of citrus situations; and made him an important figure in every attempted movement for the common good of the industry.

Florida has lost one of its most constructive citizens. Every member of this organization has lost a personal friend.

### FIRST CLEARING HOUSE HAS UNUSUAL HISTORY

Continued from page 1  
distribution plan has since been continued there from year to year. From time to time it has been modified in minor features to take advantage of the growing public recognition of the rights of foodstuffs producers. It is, however, recognized by the U. S. Department of Agriculture as the original Clearing House, and as having laid the foundation for the later joint activities of growers and shippers in other producing districts to accomplish distribution with a minimum of economic loss. Such savings, as is now becoming generally acknowledged, are in the long run of no less

advantage to consumers than they are to the growers.

That has been the outstanding development in the swing of public sentiment in recent years, a recognition that one class cannot thrive at the expense of another class; and that in protecting the interests of the growers the interests of the consuming public are simultaneously being conserved.

Both Mr. Crutchfield and Mr. Woolfolk were most active in the creation of the Imperial Valley joint undertakings of the growers and shippers there, and are generally credited with being the originators of the movement. In view of which the present participation of the American Fruit Growers Inc. several Clearing Houses now operating in as many producing districts may be considered only a very natural development.

### APPLE CONVENTION IS MID-SUMMER FEATURE

R. B. Woolfolk, vice-president of the national AFG organization, who recently has been in active charge of Florida operations during the severe illness of Manager F. L. Skelly, has left to attend the Apple Convention, which yearly is the scene of the great mid-summer gathering of fruit and vegetable men. Mr. Woolfolk made a stop in Jacksonville for a visit with Mr. Skelly, who is still ill there, and then continued on to Pittsburgh, which this year is host to the Apple Convention.

Salesmanager C. N. Williams of the Orlando Division, having finished his activities in connection with Georgia peaches, planned to join Mr. Woolfolk at the convention. Following that Mr. Williams is scheduled to make his usual trip circling the principal citrus markets before returning to Florida for the opening of citrus shipping. Mr. Woolfolk probably will return to Florida direct.

### DUTIES VARY GREATLY UPON CITRUS FRUITS

Tariff rates on citrus fruits in the principal European countries vary greatly. Some countries have general rates and others have conventional rates; that is, rates fixed by treaties wherein fruits from certain countries are admitted at a lower charge. The United States enjoys the lowest rate in each case. In some cases the rate

At whatever moment you read these lines hundreds of thousands of housewives are thinking of the Blue Goose trademark as a symbol of quality, and are planning their fruit and vegetable purchases accordingly.

applies to the gross weight of the fruit in the container, while certain countries allow a deduction for the container. All citrus is admitted free into the United Kingdom. In Germany the conventional rate on oranges is 22 cents per hundred pounds. Lemons are permitted free entry into Germany from the United States. The rate in the Netherlands is 8 per cent ad valorem (by value), while in Denmark the tariff charge is 79 cents per 100 pounds with a deduction of 20% allowed for weight of container. In Sweden the deduction for cases of 110 pounds or less is 22% on a rate of \$1.22 per 100 pounds. The same deductible allowance is made on entries into Norway, but the established rate is only 36 cents per 100 pounds. The minimum rate in France is very low, being only 12 cents per 100 pounds on oranges, lemons and other citrus except mandarins, which carry a rate of 23 cents.

#### 1,700 CARLOADS CITRUS

##### MOVED FROM RIO GRANDE

It is estimated that the citrus fruit

movement from points in the lower Rio Grande next season will be approximately 2,500 carloads, or between 800 and 1,000 more cars than were moved during the season just closed, according to the California Citrograph. Latest figures on these shipments show the total to be almost 500 cars higher than any previous estimate. Counting all truck and express shipments, the equivalent of 1,700 carloads of citrus fruit was moved out of the valley during the season just ended.

The Federal Government officials are preparing to check 2,500 cars during the coming season, estimating the total on the condition of the crop now and the natural increase expected over last year.

#### BIG NAVEL CROP IS CALIFORNIA FORECAST

Early California citrus crop estimates are inclined to run high for the 1928-29 production. Some estimates have run as high as a total of twenty-eight million boxes for oranges, lemons and grapefruit.

However, it is generally conceded

in California fruit circles that it is yet entirely too early for anything like an accurate prediction of the size of the crop. Consensus of opinion there seems to be that there will be a large yield of navels, but that Valencias will not exceed normal figures. Sizes of the young fruit on the trees are to date reported as running somewhat larger than normal.

#### TRADE COMMISSION HITS SYNTHETIC FRUIT DRINKS

Unless sufficient actual fruit is used to create the flavor and color of a drink the name of a fruit or pictorial representation of such fruit cannot be used in advertising, labels or on containers, says the federal trade commission in a recent ruling. This is another stride in the direction of protecting the purchaser against purely synthetic drinks when he believes he is getting real fruit in that drink. There appears at present no way to compel the labeling of "pop" bottles but that situation too will doubtless be met in due time.—California Citrograph.

UNIFORMLY



THE BEST

## Volume

The theory and practice of methods of mass-production and mass-selling constitute America's revolutionary contribution to the commerce of the world.

In the marketing of fruits and vegetables the American Fruit Growers Inc. is the outstanding successful instance of the application of these methods toward bridging the gap between producer and consumer.

With the widest flung and largest organization of its kind it affords year 'round effective distribution to growers of seasonal perishable crops of many sections, giving the highest degree of service.

Yet because of year 'round activity and tremendous volume of total sales it is enabled to perform this service for even the smallest growers upon a basis of charges no higher than those of lesser organizations which do not attempt the same character of service, and which lack also the advantages of national advertising and national consumer recognition.

### American Fruit Growers Inc.

Orlando, Florida

DEPENDABLE



QUALITY

# IMPRESSIONS

By The Impressionist

*Newton Victor*

And now Victor Newton has passed. Gaily, almost blithely, on Thursday afternoon he went to an Orlando hospital for an appendicitis operation the following day. Just a week later the community and citrus circles were stunned by the news that he was dead. The funeral was one of the largest in point of attendance in Orlando in many years, for Victor B. Newton was one who counted sincere friends by hundreds. Friendliness and sincerity were his outstanding characteristics; and young and old from every walk of life gathered to pay him honor. Gifted with an unusual business ability which made him a man of mark at the early age of thirty-six Victor Newton possessed also a remarkable understanding of human nature. His private, actually secret, philanthropies were many; founded doubtless upon his understanding of the frailties of the individuals he sought to benefit, and a love for his fellow men which transcended any desire for personal credit. When he had passed, his friends and the hospital attendants were astounded at finding in the grip he had packed to go to the hospital five letters and a codicil to his will, wrapped about with a brief note to the effect that the letters were to be transmitted to the addressees in the event of an untoward outcome. So the gaiety with which he masked his last actions must be credited to courage rather than ignorance of what impended; and the careful prevision which made him the business man he was thus was evidenced by his provision for the unmentioned, and apparently unthought of, contingency.

With some surprise we read the following in the New York Produce News: "Heavy rains have done considerable damage to crops in Orange County. The rains were so heavy that all the muck lands were practically submerged. It is estimated that from 75 to 80 per cent of the onion crop will be a total loss to the growers. It is said that celery and lettuce have been affected as well." Then in the next line we learn it is Orange County, New York, and not Orange Coun-

ty, Florida, that is being reported upon. Our impression is it doesn't pay to jump too quickly at conclusions. Remember Strickland Gilliland's dog named August, who jumped at a mule's conclusion; and—the next day was the first of September.

Why chamber of commerce secretaries go crazy: A gentleman in Oregon writing to inquire if the "Seald Sweet" oranges which he has seen advertised in a magazine, and which he understands "contain one-quarter more juice than other Florida oranges," are grown in that vicinity.

Yet it was none other than Edward W. Bok, retired editor of the Ladies Home Journal, who a few years ago when building his home at Mountain Lake wrote inquiring where he could obtain a number of Blue Goose orange and grapefruit trees for planting about his grounds.

From the Pacific Coast comes news that our old friend Frank Ahlburg, inventor of the Electric Fruit Marking Machine which has revolutionized citrus marketing, has again felt the urge of outdoors and has turned his personal attention back to the mines and oil wells which must always engage him. The marking machine business will go forward aggressively in capable hands while he occupies himself with something he can get a kick out of. It was while frozen in during the long winters in Alaska, when engaged in gold mining, that he and Kingsley Smith thought out and began the development of the marking machine. Before that Frank Ahlburg was very active in Nevada in the earlier strikes around Goldfield, Tonopah, Bullfrog, etc; and is one of the few humans to have run the upper rapids of the Colorado River and to have come out alive. Tex Rickard makes the most fuss these days but old timers will tell you Frank Ahlburg years ago was a very active figure in that Nevada field.

Another individual who for a time cut something of a figure in Florida citrus circles, but who has since drop-

ped out of the running, also got his start in a somewhat tamer section of Nevada in somewhat tamer and milder days. The roadhouse which he essayed to operate failed to find favor with the more reputable and responsible elements of the population, and he was given quite a start in the direction of other fields of activity.

What connection is there between traffic work and fishing? Yet Florida's two most ardent and devoted disciples of Isaak Walton are without doubt E. D. Dow, traffic manager of the Florida Citrus Exchange, and J. R. Crenshaw, traffic manager of the American Fruit Growers Inc. They constitute two of the reasons why it is now necessary to replenish the piscatorial stock of Florida waters. If there is a lake or stream upon the peninsula which these two have not

Continued on page 18

## Fruit Packing Machinery and Supplies

We are pleased to have you consult us on any packing house problem, whether it be large or small.

### Southeastern Supply Co.

Factory and Warehouse  
1714 Chicago Ave.  
(Opposite Coliseum)  
Orlando, Florida

# Citrus Crop Hit by Tropical Hurricane

The tropical hurricane which hit the East Coast of Florida on August 7 and the central sections of the state on August 8 damaged the citrus crop in those sections to varying degree.

While it is impossible at this writing (the day following the storm) to accurately estimate the damage to the crop as a whole, it may be said, generally, that damage was confined to the East Coast region between Stuart and Titusville, and to the Ridge section of Polk county. Orange, Seminole and Lake counties also suffered. Other citrus sections at this writing report negligible or no damage to crops.

On the East Coast, in the famous Indian River section, the greatest damage was sustained. Here the storm attained its greatest fury, and in many groves not only was a heavy percentage of the fruit blown off, but in many cases trees were seriously damaged. The percentage of loss is variously estimated but no authentic statement is possible at this time.

On the Ridge, around Lake Wales and Winter Haven, the damage is variously estimated at from ten to twenty-five per cent on grapefruit, with little loss to oranges. The Florida Citrus Clearing House Association at Winter Haven places the loss on grapefruit in the Ridge section at fifteen per cent, and states that there is no loss to oranges. Other estimates place the damage to oranges on the Ridge at two to five per cent, owing to locality, and the loss to grapefruit at probably twenty per cent. No estimate is available as to the fruit loss in Orange, Seminole and Lake counties.

No loss seems to have been sustained by groves in the region south of Polk county and north of Pasco.

## IMPRESSIONS

Continued from page 17

fished no one can place it. Yet they have never gone fishing together. That is perhaps fortunate both for the fish and for the traffic work which must needs be attended to.

We have never gone fishing with either of those two. We wouldn't choose to. If we had to pick traffic men to go fishing with we'd take L. D. Aulds of the Standard Growers Exchange or M. C. Cullum of Chase

& Co. Our idea of zero in amusement is a fishing trip where the members insist upon fishing constantly.

H. Grady Zellner of Lakeland has been having a long siege of serious illness; but as these lines are written is reported substantially on the mend. That is good news to a long list of friends in the industry.

H. W. Sieg formerly of Palatka and and Burbank is now embarking in the citrus field with a new concern

entitled the American Fruit Distributors Inc., which has headquarters and packing house at Jacksonville and will specialize in shimpents by water. The packing house constructed at Jacksonville last season will be enlarged for next season's business.

Even the best press agents must nod at times. We have read nothing in the papers from Tex Rickard, Babe Ruth or Lou Gehrig on the subject of the Interstate Commerce Commission's decision on the Florida Line Haul case.

Uncle Ab says if business men knew more about farming and farmers knew more about business, both would be better off.



# Use

## NATURE'S FINEST FERTILIZER

### for BETTER RESULTS

Specify GENUINE Peruvian Guano in your fertilizer mixtures—without it, no fertilizer can be best.

High in amounts of Ammonia and Phosphoric Acid, GENUINE Peruvian Guano not only contains these valuable elements in a form quickly available as plant food, but also other plant food in varied combinations.

The beneficial bacterial action imparted to the soil by GENUINE Peruvian Guano helps to break down these varied combinations into those elements which can be readily taken up as plant food.

As sole importers of the GENUINE Peruvian Guano into the United States—to be sure of getting the GENUINE, order direct from us—to be sure of a supply for later delivery, write us and arrange to reserve your future requirements.



## NITRATE

PENINSULAR CASUALTY  
BUILDING



## AGENCIES

JACKSONVILLE  
FLORIDA

August, 1928

THE CITRUS INDUSTRY

Nineteen

ITALIAN LEMON EXPORTS  
TO UNITED STATES

*Lemons, Italy*

In a cable to the Department of Commerce, dated May 8, 1928, American Trade Commissioner J. M. Marrone, at Rome, Italy, called attention to heavy exports of lemons from Palermo, Italy, to the United States. Mr. Marrone stated that according to the American Consul, Palermo, Italy, exports of lemons from Palermo to the U. S. for the four-month period January to April, 1928, inclusive, totaled the equivalent of 411,000 boxes of 88 pounds, valued \$1,106,000, or practically the same as the entire 1927 exports of 424,000 boxes, value \$1,172,000. (Note: Palermo is the principal Italian port of export for lemons; most United States lemon imports are from Palermo, ordinarily.)

In a further and more recent cable (dated May 31, 1928) to the Department of Commerce, Mr. Marrone states that according to the American Consul at Palermo, exports of lemons from Palermo to the United States from May - to 24, 1928, totaled the equivalent of 160,000 boxes of 88 pounds, value \$520,000, which represents an increase of approximately 65,000 boxes over exports for the entire month of May, 1927. Palermo exporters state that these heavy exports to the United States should end in the next two or three weeks. While early in April, 1928, exports from Palermo to Russia were heavy, most recent lemon exports have been going to the United States. England is taking some lemons from Palermo but apparently importers there have not been willing to pay the high prices obtained in New York City by Palermo exporters. Germany has not taken any appreciable quantity of lemons from Palermo this season.

Italian lemon growers are receiving around \$11 per 220 pounds of Verdelli (or summer) lemons as against around \$7 in March last. It is anticipated that the Verdelli lemon crop will be from 50 to 60 per cent below last year's crop. While recent hot winds have injured the prospects for fairly late Verdelli lemons, due to their drying and premature ripening, reports indicate that the Verdelli crop as a whole will be of good quality with size and appearance below the standard of best Verdelli lemons.

Skum on the surface of pickle brine indicates that the brine is too weak.

# Here it is!



... an entirely new  
**ORANGE BOX  
ASSEMBLER**

We offer for your consideration, Mr. Packinghouse Manager, this simple and very efficient "St. Joe" stapling machine for assembling orange boxes.

You get a stronger, truer box when you assemble it the "St. Joe" stapled way.

**DEPENDABLE**—every staple driven home at each stroke.

**SAFE**—no nails in the finished job to protrude and injure the loader, or damage clothing.

**SPEEDY**—more boxes with less work on the part of the operator, because of the automatic feed.

**STAPLING HEADS**—the new design "St. Joe" stapling heads (patent pending) automatically adjust themselves to varying thickness of box material. This machine is equipped with these heads.

You'll want to know more about this time and money-saving assembler. Write for bulletin describing the machine in detail.

We want you to become familiar with the name "St. Joe". In stapling machinery it represents over 50 years experience and progress. Above all it stands for Dependability.

**ST. JOSEPH IRON WORKS**

State & Water Sts.

St. Joseph, Michigan

"Please Say You Saw It In The Citrus Industry"

# CITRUS COMMENTS

—BY—

Charles D. Kime, Orlando, Florida

This department is devoted to furthering horticultural interests of Florida. Letters of inquiry, discussion or criticism will be welcomed.

## WHY SPEND MONEY GROWING BRIGHT FRUIT?

It seems that no industry can ever be cured of all of its attending unsatisfactory conditions and it also seems that, as an industry expands, to some of the people engaged in it certain conditions under which they operate become worse and finally intolerable. When this stage begins to appear the time for applying a remedy is already at hand as it can be done with less damage now to all groups concerned than later when it becomes more serious.

The criticism of Florida's citrus industry has been interesting from the observers' standpoint in that the emphasis of the so-called attending evils have run the whole gamut of citrus planting, producing, transportation and marketing. The criticisms have varied in emphasis with the group talking loudest at the time, though largely market price conditions have decided which phase would for the time being at least, receive the greater emphasis.

It is interesting to note that Florida citrus, in common with many other industries, has gradually been brought to its present stage through the pressure of the largest group financially interested in carrying it on. Almost invariably smaller groups have cooperated effectively but too often the moves made by one group have made enemies in other groups because, first, any move disturbs business relationships and, second, any change is sure to be detrimental to some one's business, as now carried on. Opposition is always to be expected to new laws, new combinations or plans looking to improvement of conditions of one group if it affects in any way but very beneficially the work of any other group. Overwhelming majorities all on one side are necessary to get anywhere.

The Florida citrus industry is especially fortunate in the universal high class of operators from producer to consumer with which it comes

in contact. A criticism made by one group of another part of the industry has always failed to obscure the defects in the methods of operation of the criticizer. As a result, the shipper has wasted little time saying that the shipper is all right, but the fruit was rotten, and the grower has wasted little time in saying that the shipper did not know how to market what he raised. Each group knows and appreciates the defects in our present system and method of growing and marketing. Excepting a few sore-heads, which may be found in any business, the problems have been worked out jointly by cooperation between groups, because the men themselves have realized that in the end the business must be worked out as a unit in the light of its effect on the whole industry in all of its branches.

The industry has also been especially fortunate in that many shippers operate groves and that they were growers before they were shippers. This has made it possible for the industry to "put over" the present move for unified cooperation without spending years in a preliminary educational effort and possibly serious industrial strife and disagreement. The success attending the Florida Citrus Growers' Clearing House movement is outstanding and phenomenal in its completeness of cooperation between a huge growers investment on the one hand and a large

number of shippers and packers marketing organizations on the other. There are bound to be short-sighted individuals in both groups. Some of these have already been in evidence, but the move is too important to all of South Florida. Every business is directly affected by the value of the orange and the grape-fruit. With such universal personal interest the few opposing individuals will find a uni-

## PAINTER'S

Simon Pure Citrus

and

Gem Farm Crop  
FERTILIZERS

ARE

"Time Tried and Crop  
Tested"

Our Brands are the Acknowledged Standard by which Growers of Florida have judged all Fertilizers for nearly 40 years.

"Giving all we can for what we get instead of getting all we can for what we give" is the policy of

THE E. O. PAINTER  
FERTILIZER CO.

Jacksonville, Florida

## HOTEL HILLSBORO

Tampa, Fla.

TOP O' THE TOWN

European Plan, Fireproof 300 Rooms With Baths

THE CENTER OF TAMPA

"Please Say You Saw It In The Citrus Industry"

versal popular opinion against them. This opinion is a force none of us can long disregard.

The growers as producers have gone nearly as far as they could in working out economical methods of fruit production. Bright fruit, irrigation, grove care and fertilizing, the heaviest of all necessary grove expenses, cost money. There is little assurance of a profit on this cost, during good crop years under our old system of handling. The grower knows this, therefore why be enthusiastic about spending money for such a doubtful purpose. It seemed rather a natural thing to get sore when the proposition was mentioned.

With controlled distribution, joint advertising, and standardized grades, the grower can accept bright fruit production and grove costs with a smiling face, for he knows that in this way he will get a run for his money. Under the old system of indiscriminate shipping, bright fruit did average the grower more money than russetts, but with a price curve, often one or two dollars lower than it should have been, the price for bright fruit was depressed in proportion and the margin of profit on its production reduced even below the vanishing point.

It is a mistake to assume that a grower cannot market fruit effectively or that because he is a grower he should not attempt to market, but rather leave this up to other interests. The citrus grower is fully as intelligent as any other organization or agency connected with the enterprise and the only possible way to keep "him" as a body out of the marketing end of the business is for his product to be profitably and properly handled. It might also be pointed out that the grower is in the shipping business with profit to himself. Several of our largest and best shippers broke into the fruit business from the grove ownership side and in addition to these individuals "Shipper Grove Owners" we find in the Florida Citrus Exchange a combination of smaller owners profitably marketing their own product.

It is a reasonable conclusion to assume that the grower is actually capable of handling every phase of his business. Past and present experience is proving this conclusively. And this experience also shows that the interest of these two groups is thoroughly the same.

Under the Citrus Growers' Clearing House Association plans, so long

## THE CITRUS INDUSTRY

as it is directed and run for the benefit of the citrus industry as a whole and is kept out of selfish partisan wrangling, whole hearted attention can be given to improving production, producing better grade fruit and developing by-products from the off-grade fruit that should never leave the State.

### REPORT OF THE HAWAII

#### AGRICULTURAL EXPERIMENT STATION ISSUED

The development of a third agricultural industry in Hawaii to insure a crop for the farmers in the event of a failure with sugar-cane or pineapples is one of the problems with which the agricultural experiment station there is concerned. The station is especially interested in fostering the edible-canna industry, according to the report of the Hawaii Agricultural Experiment Station for 1927, just issued by the United States Department of Agriculture.

The crop is comparatively new in Hawaii but gives promise of adding a starch-producing industry to the islands, and can be grown on thousands of acres of land not suited to pineapple and sugar-cane cultivation. Plans have been formulated and experiments started to determine to what extent edible canna can be utilized by the leading agricultural industries, turning the tops under as a green manure and using the root-stocks as a source of commercial starch or as a stock feed. A market has recently been developed for the starch at a price only slightly lower than that prevailing for sugar.

A copy of the report, which includes a discussion of the work of the various divisions of the station, may be obtained from the United States Department of Agriculture, Washington, D. C.

As I was coming down the street I met a man from St. Ives. "Whatcha got under that arm," says I.

"Sugar for my coffee," says he.

"Whatcha got under t'other arm?"

"Sugar for my tea," says the lad coyly.

Well, you may imagine how my ire was up, so by and large I gave him a couple of lumps for his cocoa. Chortle. Chortle. — Amherst Lord Jeff.

Two silos are being built in Flagler County and will be filled as soon as completed, reports County Agent L. T. Nieland.

"Please Say You Saw It In The Citrus Industry"



## Beautify Your Home Grounds

Visit us at Oneco, or write for free advisory service. Over 45 years experience is yours for the asking. Free catalog on request.

Reasoner Brothers'

ROYAL PALM NURSERIES

Oneco, Florida

## HEATERS SAVE MARKET CROPS FROM FROST

From all over the U. S. growers report successful use of National Orchard Heaters in protecting market crops—strawberries, pears, cherries, prunes, etc., oranges, lemons—cut flowers—ornamentals, and vegetables. Economical—efficient—easy to operate. Burns oil practically without smoke. Over 2,000,000 heaters sold. Write for our big new 68 page book FREE. National Orchard Heater Co., General Office: Covina, Calif. Branches: Toledo, O.; Haines City, Fla. National Heaters are manufactured by American Can Co.



## The Proven Summer Spray

For one-application control of Red Scale with a wide margin of safety for fruit and foliage, spray your trees with VOLCK. Experience has proven that it combines both safety and effectiveness. Makes your trees clean and keeps them clean.

Talk with your nearest dealer  
CALIFORNIA SPRAY-  
CHEMICAL COMPANY  
O. R. Blois, District Sales Mgr.  
61 W. Jefferson St., Orlando, Fla.

# VOLCK



The Scientific Insecticide

## Far Eastern Foreign Trade In Fresh Fruit

Commerce Reports for June 4, 1928, contain an article "Far Eastern Foreign Trade in Fresh Fruits" by Daniel J. Moriarty, Specialist, Fresh Fruits, Department of Commerce. Copies of this article are available, free of charge, to any interested person or concern.

The following excerpts from this article may prove of interest:

"A study of Far Eastern countries for which statistics are available indicates that the combined figures for such trade represents total exports of \$8,500,000 worth of fresh fruits a year from 1922 to 1926, inclusive, and total imports valued at approximately \$6,000,000 a year.

"Australia was the leading eastern fruit exporter, with exports valued at \$4,162,000 a year and China was the principal fruit importer, with purchases totaling \$2,774,000 a year. Other countries showing exports of fresh fruit were China, Japan, New Zealand, Fiji Islands, Chosen, the Philippine Islands, Ceylon, and the Netherlands East Indian group — Java and Madura, Sumatra, Borneo, and "Other Netherlands East Indies". Other importing countries were New Zealand, Chosen, the Philippine Islands, Australia, Ceylon, Fiji Islands, and the Netherlands East Indian group.

"Apples were the principal fresh fruit exported during 1922 to 1926, totaling in value \$4,263,000 a year, and citrus fruits were the leading imports, with a value of \$2,414,000 a year. Other yearly exports were citrus fruits, \$2,151,000; bananas, \$532,000; pears, \$361,000; and other fresh fruit \$1,205,000. Other yearly imports were apples \$682,000; bananas \$627,000, and other fresh fruit \$2,125,000."

The article also discusses United States exports of fresh fruit to the Far East, as follows:

"While exports of fresh fruit from the United States to far eastern countries are as yet relatively small, there has been a gradual increase in such exports during the past five years. The more important, separately classified fresh fruits exported from the United States to the Far East totaled in value approximately \$800,000 in 1923, \$1,000,000 in 1924, \$1,200,000 in 1925, \$1,500,000 in 1926, and \$2,000,000 in

1927.

"The Philippine Islands, with imports valued at \$572,000, were the leading far eastern market for fresh fruit from the United States in 1927, while China's imports were valued at \$561,000 (Hong Kong \$191,000). Imports of other countries and the values were New Zealand \$410,000, British Malaya \$129,000, Japan \$124,000 Australia \$95,000, Ceylon \$30,000, and Java and Madura \$14,000.

"Oranges, valued at \$925,000, represented our principal export to the Far East in 1927 while apples came next with a value of \$415,000, followed by lemons \$355,000, grapes \$192,000, and grapefruit \$48,000, a total of \$1,935,000."

Valencia oranges are being planted extensively in California due to the belief that it will be possible to produce strains which will bear during the summer and fall. For several years the U. S. Department of Agri-

culture has been making studies of bud differentiation on Valencia trees in California.

Helen: "How far south are you going?"

Hazel: "Oh, about six trunks."—Goblin.

### Orders - Inquiries

Can be Secured by MAIL

### POLK'S REFERENCE BOOK and Mailing List Catalog

Gives counts and prices on over 3,000 different lines of business. No matter what your business, in this book you will find the number of your prospective customers listed. Valuable information is also given as to how you can use the mails to secure orders and inquiries for your products or services.

Write for Your FREE Copy  
R. L. POLK & CO., Detroit, Mich.  
Largest City Directory Publishers in the World  
Mailing List Compilers—Business Statistics  
Producers of Direct Mail Advertising



# A & G

## FERTILIZER

### The Old Way

You bought a 200-pound sack containing 150 pounds of plant food and 50 pounds of filler.

200 Pounds

8 lbs. 10% Nitrogen  
8 lbs. 10% Phosphate  
20 lbs. 10% Potash  
15 lbs. AMMO-PO  
64 lbs. Acid Phosphate  
15 lbs. 10% Nitrogen  
50 lbs. Filler  
200 Pounds

4-8-5

### A & G Method

You buy a 150-pound sack containing 150 pounds of plant food only—no filler. You save the cost on freight, haulage and distribution of worthless matter.

150 Pounds

8 lbs. 10% Nitrogen  
8 lbs. 10% Phosphate  
20 lbs. 10% Potash  
15 lbs. AMMO-PO  
64 lbs. Acid Phosphate  
15 lbs. 10% Nitrogen  
150 Pounds

Write for Our New Farm Record Book

## ATLANTIC & GULF FERTILIZER CO.

C. NASH REID, President  
Jacksonville, Florida

August, 1928

## NEW YEARBOOK

ISSUED BY DEPARTMENT  
OF AGRICULTURE

The 1927 Yearbook of Agriculture is now being distributed by the United States Department of Agriculture. This volume is the second of a series designed to report recent agricultural developments in brief articles. It contains 320 articles, varying in length from 250 to 1,500 words, in which new scientific discoveries and progress in farm production and marketing are dealt with by department specialists. Every branch of the department's work is represented. But the book is not confined to matters arising directly from the department's research or regulatory activities. It also covers developments resulting from the progress of science and invention generally, and from the ceaseless effort of the agricultural industry to adapt itself to changing conditions. Considerable space, for example, is devoted to the growth and problems of farmers' business organizations.

Secretary of Agriculture W. M. Jardine, in a foreword, indicates that the book is prepared primarily for farmers, to whom it is distributed more extensively than to any other group of persons. It is one of the few books available to the farmer for reading and reference in the field of his occupation, says the Secretary. Accordingly, readability and variety of interest, rather than exhaustive treatment of the different matters discussed, have been preferred. Secretary Jardine points out that scientists, students and professors have many other sources of information which they may consult for more complete data. Readers who want more detailed information about subjects discussed in the Yearbook are invited by the Secretary to write to the specialists whose names are signed to the articles.

In addition to the 320 articles already mentioned, which appear under the general title "What's New in Agriculture," the Yearbook contains the annual report of the Secretary of Agriculture, and the statistics for the United States, and for the world as far as the agriculture of this country is concerned, are brought together for a series of years ending with the crop year 1926-27. For major crops, historical series going back to 1867 are given. Information is also furnished on returns from farming, costs of farm production, farm living standards, wages, labor, popula-

## THE CITRUS INDUSTRY

tion, freight rates, temperature and rainfall, and many other subjects knowledge of which is helpful to the producer in solving his problems of production and marketing. This material also supplies foundation data for the analysis of price trends, shifts in production, and the relationship of prices to changes in production. Tables of international trade covering substantially the international trade of the world are included. The book, which contains 1,234 pages, is well illustrated and indexed, and its articles are arranged in alphabetical order.

The Yearbook is published under a special congressional appropriation. Four hundred thousand copies are published, and these will be distributed largely by Congressmen and Senators, to each of whom is allotted about 400 copies. Twenty thousand copies are purchased by the United States Department of Agriculture for allotment to its various bureaus. Persons who can not obtain a copy of the book from Congressmen or Senators, or who are not on the list to receive one from some bureau of the department, may obtain a copy for \$1.50 from the Superintendent of

Twenty-three

Documents, Government Printing Office, Washington, D. C.

## LAIRD LEAVES TO WORK WITH U. S. DEPARTMENT

A. S. Laird, assistant agronomist at the Florida Experiment Station, has resigned his position to take up work with the United States Department of Agriculture as agent in forage crops. He will be located at the Sandhill station in South Carolina.

Mr. Laird is a native of South Carolina but attended the University of Florida, where he received the bachelor's degree in 1926 and the master's degree in 1927. Since finishing his graduate work in the University he has been employed as assistant agronomist at the Florida Experiment Station.

Farmers in Hernando County have practiced seed treatment to a larger extent this year than ever before, reports County Agent Logan. The local newspapers have cooperated with him in putting on a campaign for this work.

A fresh egg will sink rapidly when put in water, while one that is stale has more of a tendency to float.

# Intend To Plant?

We advise intending planters of citrus groves to select early some good nursery, and without delay to make reservations of their requirements for next Fall plantings.

There promises to be a shortage of planting stock among nurseries of established reputation and known quality output, which suggests the advisability of advance reservations.

We will continue, however, to quote all other stocks at a substantial discount, our specialty as for a quarter-century being high quality sour orange rootstocks budded to proven varieties

## Lake Nursery Co.

Capital \$300,000

Oldest Sour Orange Nursery In Florida

Leesburg, Florida

"Please Say You Saw It In The Citrus Industry"

## FLORIDA FREIGHT RATES

Continued from page 8

heart of the question of proper distribution. How can Florida shippers successfully market their products in competition with other districts if Florida lines impose these short-sighted restrictive policies, while lines originating competing traffic are doing everything in their power to aid their shippers to successfully market their products?

If the Florida lines spent as much time trying to aid their shippers as they do in trying to find new ways to lay additional charges on the industry, both carriers and shippers would prosper and Florida would, it is safe to predict, soon outrank other perishable districts. It is extremely unfortunate that Florida lines have obstinately refused to recognize that their own interest is closely allied with the prosperity of the Florida shippers. They would do well to follow the broad-minded conclusion of Mr. Warfield quoted. Instead, the Florida shipper has had an up-hill fight, has received no co-operation nor consideration, and can only obtain justice thru the Interstate Commerce Commission, after waging long and bitterly contested fights.

Recognizing the importance of freight rates and regulations in the distribution of Florida's crops, the Florida shippers organized a League, known as the Growers and Shippers League, to bring before the Interstate Commerce Commission all injustices affecting Florida's products. Under the capable direction of Mr. J. Curtis Robinson this organization has already saved the industry hundreds of thousands of dollars, and its work is hardly begun. In this article we have only considered a very few of the major points confronting the League should have the financial matters which will cost the industry hundreds of thousands of dollars if not corrected. In order to function properly and to get these matters corrected as quickly as possible the League should have the financial support of every shipper and grower. Unless it has this support it will be hampered in its fight and action upon many important rate matters will naturally have to be deferred. If you are a grower or shipper and do not belong to the League, it is to your interest to immediately get in touch with Secretary-Manager J. Curtis Robinson, Growers and Shippers League, Orlando, Florida, who will gladly supply you with information concerning the League's activi-

## THE CITRUS INDUSTRY

ties and future plans. It is an investment which will return you many times the cost.

## FRUIT SPECIALIST REPORTS

## BETTER MARKETS ABROAD

*June industry & trade*

Improvement in the prospective European demand for fruits this year as contrasted with conditions at this time a year ago is reported by Edwin Smith, foreign fruit marketing specialist for the United States Department of Agriculture, who will make a survey of production and export conditions in this country before returning to the department's London office.

Mr. Smith declares that it is "too early to forecast European fruit crops

August, 1928

for 1928, but aside from the possible competition of domestic fruit crops on which there is little information available at this time, conditions abroad are more favorable for a good demand during the forthcoming season than they were at this time in 1927."

Mr. Smith has been the department's foreign fruit representative the last four years. He says that people throughout Europe are seemingly on a more stable plane this year than at any time during that period. Fundamental conditions and disappointments have settled down to a level of more normal conditions, many of the debts assumed by industrial workers during that expensive recess in work have been liq-

## ETHYLENE

*Universally used by the  
citrus industry for coloring*



**Ripens, colors and blanches  
fruits and vegetables**

**Economical / Safe / Clean**

*For information write to*

**CARBIDE AND CARBON  
CHEMICALS CORPORATION**

30 East 42nd Street, New York, N. Y.

Los Angeles

San Francisco

*Warehouses are located in all important centers in the United States*



*Unit of Union Carbide and Carbon Corporation*

vidated, and people are living in a more normal state than was the case in 1927.

"British coal, steel and cotton industries," he adds, "are still in a bad way. Judging from the tone of discussions as reported in the press these industries are now realizing that the past is gone forever and that the day for reorganization has arrived. Probably steel and iron masters have accomplished more in financial reorganization than either coal or cotton. The new budget of the Chancellor whereby a regular scheme for liquidation of the national debt is set up while the tax burden of certain depressed industries is lightened has added a heartening spirit in many quarters throughout Great Britain.

"Some of the Continental countries have preceded Great Britain in post-inflation reorganization and have passed from the hectic flush of promotion uncertainty to settled activity. In the buying of American fruits Germany has illustrated the dependable characteristics accruing from this economic settling down. During the past winter, and again this spring, with apples from New Zealand and Australia, Germany has come up to buying expectations more satisfactorily than have United Kingdom markets. This unquestionably is partially due to the fact that we expect more of the British markets than we do of the German."

Following conferences with Washington officials of the Bureau of Agricultural Economics, Mr. Smith will make a six weeks' survey of the Pacific Coast fruit districts, and in the latter part of the summer will survey the exporting districts in the eastern part of the United States before returning to his European post.

The 1927 Yearbook of Agriculture is now being distributed by the United States Department of Agriculture. The book contains 320 articles, varying in length from 250 to 1,500 words, in which new scientific discoveries and progress in farm production and marketing are dealt with by department specialists.

Leon County has 27 members of the five-acre corn contest and every man is enthusiastic over his prospects of making a big crop of corn, reports County Agent G. C. Hodge.

Sixty out of every 100 Americans are in college, compared with 13 in France and 14 in the British Isles.

# Now Rebuilt

## Bigger and Better Than Before Fire

**¶** **SCHNARRS SULPHUR MILL**, that portion of the big Schnarr plant recently destroyed by fire, has been completely rebuilt in record time and is again in operation.

**¶** Not only has it been rebuilt but it has been modernized in every respect taking advantage of the very newest ideas in the construction of such plants.

**¶** Capacity also has been increased in order to be able to meet the demands upon us for dusting sulphur from growers who have learned that the best air floated dust is in the long run most economical because it is most effective.

**¶** Schnarrs is the only air floatation sulphur plant in the Southeast and is operated in order to enable us to be assured of a quality product which at all times will meet the needs of the growers.

**¶** Its rebuilding once more completes the big Schnarr factory group, the largest of its kind in Florida.

## J. Schnarr & Company

**Pioneers in 1906 --- Leaders Still in 1928**  
**Complete line of Sprayers and Dusters**

**Orlando, Florida**

**Winter Haven, Florida**

Twenty-six

## WILSON & TOOMER

### ENLARGING PLANT

The Wilson & Toomer Fertilizer Co., of Jacksonville, Fla., has just issued the following statement to patrons and the public:

"When our plant was destroyed by fire in October of 1920 we decided in rebuilding to erect absolutely the last word in fertilizer plant construction and to put a plant superior in space, facilities and equipment to anything that had ever been in Florida. With this idea in mind, we had our engineers make our plans and we started construction. We then decided that we had possibly over-estimated the requirements of the coming few years, so went ahead and erected our new plant 120 feet shorter than our plans called for, with the idea when the situation justified it, to go ahead and complete the remaining 120 feet.

"Since then our business has grown steadily and during the year ending June 30, 1928 we think that we can say without fear of successful contradiction that we put through our factory a greater tonnage than was put through any complete fertilizer plant South of Baltimore. Anticipating a continual increase in the demand for IDEAL FERTILIZERS during the next few years, we decided to equip ourselves in the best possible manner to take care of the demands, and are now proceeding to erect an additional 120 feet which will give us a main factory building 580 feet long and 230 feet wide.

"We have also decided to afford better storage facilities for Nitrate of Soda and Nitrate of Potash to erect another Nitre House on the South side of our plant as the Nitre House on the North side is not large enough to accommodate us in the volume of business we are now doing.

"Our policy has always been to keep abreast of the times, watching closely all new processes and developments in our industry which work toward economies and lower fertilizer costs for the benefit of the grower, and for better combinations of soluble plant food, so in our program of extension this summer we are also installing equipment for ammonia oxidation in our acid plant which, briefly, equips us for the use of Anhydrous Ammonia instead of Nitrate of Soda in the manufacture of Sulphuric Acid, the advantage being a slight reduction in cost in favor of Anhydrous Ammonia as well

## THE CITRUS INDUSTRY

as less deterioration in our Acid Chambers.

"To turn out the complete fertilizer in the best possible mechanical and physical condition requires a vast amount of plant space as well as extensive and up-to-date facilities, all of which on the completion of our present program we will be equipped as thoroughly as science and money can provide."

In writing advertisers please mention The Citrus Industry.

"Why did you break your engagement with that school teacher?"

"I didn't show up one night, and she wanted me to bring a written excuse signed by my mother."—C. C. N. Y. Mercury.

## CLASSIFIED

## Advertisements

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

### REAL ESTATE

**WILL EXCHANGE** West Texas cattle ranch for unimproved or improved land in Florida. What have you? Give price and full particulars. T. E. Bartlett, 3410 McKinley Ave., El Paso, Texas.

### "BOOK OF TRUTH"

For planters of new groves  
Is yours for the asking,  
Write Today.

### OCKLAWAHA NURSERIES INC.

#### "Pedigreed Citrus Trees"

Lake Jem, Florida

**FOR SALE**—Pineapple land in winterless Florida. \$15 an acre. Almont Ake, Venus, Fla.

**WANT TO SELL HALF INTEREST IN FIFTEEN ACRE SATSUMA BEARING GROVE ON HIGHWAY NEAR PANAMA CITY.** ROBT. LAMBERT, OWNER. FOUNTAIN, FLA.

**SATSUMA BUDWOOD** from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

**WANT TO hear** from owner having farm for sale: give particulars and lowest price. John J. Black, Box 93, Chippewa Falls, Wisconsin.

**WANTED**—To hear from owner of land for sale. O. Hawley, Baldwin, Wis.

### MISCELLANEOUS

**FOR SALE:** Packing House Machinery Out-

"Please Say You Saw It In The Citrus Industry"

August, 1928

fit, complete, 2 car per day capacity, first class condition. The owner is re-placing with new four car capacity outfit. Florida Citrus Machinery Co., Dunedin, Fla.

**FOR SALE** one 34-ft. old style single or half Parker Sizer. P. O. Box 6, Fort Meade, Fla.

**FOR SALE**—Dairy and stable manure, car lots. Link & Bagley, Box 464, Tampa, Fla.

**WHITE WYANDOTT** Cockerels, regal strain—the best in the country, direct from Martin pens. Utility and show birds \$5.00 each; also eggs for hatching \$5.00 per 15. W. A. King, Gen. Del., St. Petersburg, Fla.

**SELECT CITRUS** fruit trees for home and commercial planting, special summer prices. A. E. Nichols, Box 262W, Tampa, Fla.

**HIGH BLOOD PRESSURE** easily, inexpensively overcome, without drugs. Send address. Dr. J. B. Stokes, Mohawk, Fla.

### WANTED

### COMPLETE LINE OF CITRUS GROWERS' SUPPLIES

A well known reputable firm of national scope, marketing certain materials required by citrus growers, is extending its line of merchandise to cover complete requirements of its customers. If you have something excellent to merchandise—fertilizer, orchard heaters, pest control material or equipment, or any similar product for wide distribution—I can tell you whom you should see. Address: J. T. Pierson, 503 South Union Drive, Los Angeles, Calif.

**BEGGARWEED SEED.** Place your order for Beggarweed seed now and be assured of delivery. Write for special prices. Wm. G. Ranney, Box 297, Monticello, Fla.

**PUREBRED PULLETS FOR SALE**—White Leghorns and Anconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorn hens now laying 70%. Write or wire for prices. C. A. Norman, Dr. 1440, Knoxville, Tenn.

**FOR SALE:** Skinner Washer, 4 runway, 16 foot, good condition, owner is replacing by a 6 runway, 18 foot machine. Florida Citrus Machinery Co., Dunedin, Fla.

**LAREDO SOY BEANS,** considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

**FARMER AGENTS:** Make \$25.00 weekly selling Comet Sprayers. Profitable winter employment. You take orders. We deliver and collect. Commissions weekly. Established 35 years. Particulars free. Busier Co., Box C-13, Johnstown, Ohio.

**FOR SALE**—All varieties bananas and citrus trees. D. A. Nigels, Palm Harbor, Fla.

**FOR SALE:** 5 runway foot Spiral Polisher. Owner is replacing by an 8 runway, 16 foot, spiral polisher. Florida Citrus Machinery Co., Dunedin, Fla.

**RUNNER** peanuts—Spanish peanuts Early speckled - Osceola - White Chinese and Bunch Velvet Beans. All varieties peas and Soybeans. Large or small lots. H. M. Franklin, Tennessee, Georgia.

**AVOCADOS - SEED** — Grafted. Reliable bearers only. John B. Beach, West Palm Beach, Florida.

**PLANT AVOCADOS** in Redland Section, Dade County, where they thrive best. Best paying crop in United States. Send for prospectus. Brooks Properties, Realty Board Bldg., Miami.

**BABY CHICKS:** Send no money, shipped C. O. D., pay mail man when delivered. Leghorns \$14.00 per 100; reds, orpingtons, minorcas \$16.00; mixed \$18.00; live delivery, postpaid. Florida Baby Chickery, Lakeland, Florida.

**COW PEAS.** Brabams, Irons and Whippoorwills. Nice clean stock. Chase & Co., Sanford, Florida.

**ROUGH LEMON** Seedlings in any quantity, special summer sale, very attractive prices. A. E. Nichols, Box 262W, Tampa, Fla.

*Gulf Fertilizer Co., Bradenton*

## GULF FERTILIZER COMPANY ENLARGES ITS FACTORY

It is just 25 years ago that The Gulf Fertilizer Company commenced operations with a factory at Bradenton and offices at Palmetto. Early success attended the efforts of the firm and it was soon found necessary to transfer the plant to Tampa.

Its first premises in this city were on the site of the present Union Terminal, but it was not long however before this location had to be abandoned for an even larger building at 36th Street South of East Broadway, the present home of the Company.

An now, in commemoration of the Silver Anniversary of the firm, the present moment sees contractors busy rebuilding, remodelling and re-fitting the factory.

The new building, which is being equipped with the most modern mechanical facilities available for the manufacture of high grade fertilizers, will be 306 feet long, 161 feet wide with an actual working area of over 363,000 square feet. The work, which is proceeding apace is due to be completed by October the first next, and operations are so planned that during the building there will be no interference with the manufacture of Gulf Brand Fertilizers, for which the Company predicts a heavy demand during the coming season.

### WHAT ABOUT CITRUS?

One of the largest shippers of Citrus and other sub-tropical fruits told this writer that he was nearly out of grapefruit, says the Coconut Grove Times and that the demand would run far in advance of the supply this year. One reason for this condition is the fact that frost and other natural causes cut down the production, but the principal cause of low supplies of fruit is the fact that Dade county is not raising as much citrus as formerly.

The opening of foreign markets and the stimulus that domestic markets have received this year indicates that Dade county can and should return to the development of citrus groves. That is just another of the natural resources of Dade county gone begging. Some wide-awake people are advertising for groves, and they will put them in shape for production.

. Separate roosters from the laying flock after the hatching season is over. Infertile eggs keep better in hot weather.



## More Work - Better Work

with the New Skinner

## All Steel Box Press

Not even a high grapefruit pack will cause the arms to jab the fruit in this new box press built specifically to meet Florida conditions. Does its work well and easily with minimum effort upon the part of the top nailer. No need to shift the box to attach center strap; no need for undue, heavy pedal work.

Occupies small space; strapping reel is out of the way; shock absorbing reel brake is most effective. All-Steel construction with frame welded, not bolted; extremely rigid throughout and free from vibration.

Like all other members of this new family of All-Steel packing house machines the Skinner Box Press represents the most highly improved development in that line. Your top-nailer will approve it heartily, and do more and better work with it. Detailed circular and specifications upon request.

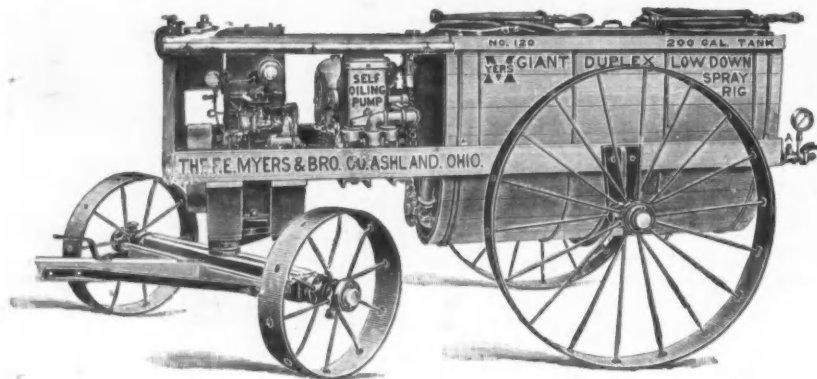
**Florida Citrus Machinery Co.**

**B. C. Skinner, Pres.**

**Dunedin, Florida**

"Please Say You Saw It In The Citrus Industry"

# Sprayer Opportunity



You have often wanted a real MYERS SPRAYER, with the Myers guarantee, but have not bought one so far because other sprayers could be had so much cheaper. We are now in position to offer you a most unusual buy of Myers machines of the latest model with porcelain cylinders at astounding prices.

We have a limited number of the two most useful sizes: the No. 120 with the two cylinder self-oiling pump and the 4 Horse LeRoi engine; and the No. 125 with the four cylinder self-oiling pump and the 2 cylinder LeRoi 8 horse engine. These sprayers all have 200 gallon tank.

|   |               |
|---|---------------|
| <b>No. 120 Spray Rig, fully equipped with hose and guns</b> |               |
| is listed by the manufacturer at                            | \$599.00      |
| <b>OUR SPECIAL SALE PRICE</b>                               | <b>498.00</b> |
| <b>No. 125 Spray Rig, fully equipped with hose and guns</b> |               |
| is listed by the manufacturer at                            | \$777.00      |
| <b>OUR SPECIAL SALE PRICE</b>                               | <b>627.00</b> |

Prices hold only to September 15, 1928

In view of the actual saving you can make at this time on Myers, it will even pay you to buy sprayers that you will need next spring.

Send your order by return mail or wire us.

## Timely Spray Hints

If you have an extra heavy infestation coming upon young or bearing trees give them a heavy dose of

## Fico-60

during August. Dilute 1 to 50 and wet trees thoroughly. Do not spray fruit you expect to ship during the test period after this month, because it will likely reduce the sugar content on tests. Spray such trees during August or wait until December.

# Florida Insecticide Company

Apopka, Florida